

93/ GP-2631 ✓



Robert Greene Sterne
Edward J. Kessler
Jorge A. Goldstein
David K.S. Cornwell
Robert W. Esmond
Tracy-Gene G. Durkin
Michele A. Cimbala
Michael B. Ray
Robert E. Sokohl
Eric K. Steffe
Michael Q. Lee
Steven R. Ludwig
John M. Covert
Linda E. Alcorn
Robert C. Millonig
Lawrence B. Bugaisky
Donald J. Featherstone
Michael V. Messinger

Judith U. Kim
Timothy J. Shea, Jr.
Patrick E. Garrett
Jeffrey T. Helvey
Heidi L. Kraus
Albert L. Ferro*
Donald R. Banowitz
Peter A. Jackman
Teresa U. Medler
Jeffrey S. Weaver
Kendrick P. Patterson
Vincent L. Capuano
Eldora Ellison Floyd
Thomas C. Fiala
Brian J. Del Buono
Virgil Lee Beaston
Theodore A. Wood
Elizabeth J. Haanes

Joseph S. Ostroff
Frank R. Cottingham
Christine M. Lhuiller
Rae Lynn P. Guest
George S. Bardmesser
Daniel A. Klein*
Jason D. Eisenberg
Michael D. Specht
Andrea J. Kamage
Tracy L. Muller*
LuAnne M. DeSantis
Ann E. Summerfield
Aric W. Ledford*
Helene C. Carlson
Timothy A. Doyle*
Gaby L. Longworth
Lori A. Gordon*
Nicole D. Dretar*

Ted J. Ebersole
Jyoti C. Iyer*
Laura A. Vogel
Registered Patent Agents*
Karen R. Markowicz
Nancy J. Leith
Matthew J. Dowd
Aaron L. Schwartz
Katrina Yujian Pei Quach
Bryan L. Skelton
Robert A. Schwartzman
Teresa A. Colella
Jeffrey S. Lundgren
Victoria S. Rutherford
Michelle K. Holoubek
Robert H. DeSeims
Simon J. Elliott

Julie A. Heider
Mita Mukherjee
Scott M. Woodhouse
Michael G. Penn
Christopher J. Walsh

Of Counsel
Kenneth C. Bass III
Evan R. Smith
Marvin C. Guthrie

*Admitted only in Maryland
*Admitted only in Virginia
*Practice Limited to
Federal Agencies

November 12, 2004

WRITER'S DIRECT NUMBER:
(202) 772-8675
INTERNET ADDRESS:
JHELVEY@SKGF.COM

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Art Unit 2631

Re: U.S. Utility Patent Application
Application No. 09/525,615; Filed: March 14, 2000
For: **Method, System and Apparatus for Balanced Frequency Up-
Conversion of a Baseband Signal and 4-Phase Receiver and
Transceiver**

Inventors: Sorrells *et al.*
Our Ref: 1744.0450003

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Fee Transmittal (Form PTO/SB/17);
2. Fourth Supplemental Information Disclosure Statement;
3. Form PTO-1449 (3 pages);
4. Copy of (1) cited document (Document No. AP59); and
5. Return postcard; and
6. PTO-2038 Credit Card Payment Form for \$180.00 to cover:
\$180.00 for submission of an Information Disclosure Statement.

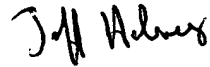
It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
November 12, 2004
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey T. Helvey
Attorney for Applicants
Registration No. 44,757

JTH/agj
332369_1.DOC

NOV 12 2004

PTO/SB/17 (10-03)

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

FEE TRANSMITTAL for FY 2005

Effective 10/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 180.00

Complete if Known

Application Number	09/525,615
Filing Date	March 14, 2000
First Named Inventor	David F. Sorrells
Examiner Name	Phu, Phuong M.
Art Unit	2631
Attorney Docket No.	1744.0450003

METHOD OF PAYMENT (check all that apply)
☐ Check ☒ Credit card ☐ Money Order ☒ Other** ☐ None

****Charge any deficiencies or credit any overpayments in**
☐ Deposit Account: the fees to Deposit Acct. No. 19-0036.

 Deposit
Account
Number
Deposit
Account
Name

19-0036

 Sterne, Kessler, Goldstein & Fox
P.L.L.C.

The Director is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Credit any overpayments

☐ Charge any additional fee(s) or any underpayment of fee(s)

☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION
1. BASIC FILING FEE

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 790	2001 395	Utility filing fee	
1002 350	2002 175	Design filing fee	
1003 550	2003 275	Plant filing fee	
1004 790	2004 395	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
SUBTOTAL (1)			(\$) 0.00

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims	Extra Claims	Fee from below	Fee Paid
65 - 95 ** =	0	\$18.00	\$0.00
Independent Claims	10 - 11 ** =	\$88.00	\$0.00
Multiple Dependent		\$300.00	\$0.00

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 88	2201 44	Independent claims in excess of 3
1203 300	2203 150	Multiple dependent claim, if not paid
1204 86	2204 43	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$) 0.00

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)
3. ADDITIONAL FEES

Large Entity Small Entity

Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for <i>ex parte</i> reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 430	2252 215	Extension for reply within second month	
1253 980	2253 490	Extension for reply within third month	
1254 1,530	2254 765	Extension for reply within fourth month	
1255 2,080	2255 1,040	Extension for reply within fifth month	
1401 340	2401 170	Notice of Appeal	
1402 340	2402 170	Filing a brief in support of an appeal	
1403 300	2403 150	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,370	2453 685	Petition to revive - unintentional	
1501 1,370	2501 685	Utility issue fee (or reissue)	
1502 490	2502 245	Design issue fee	
1503 660	2503 330	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	\$180.00
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 790	2809 395	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 790	2810 395	For each additional invention to be examined (37 CFR 1.129(b))	
1801 790	2801 395	Request for Continued Examination (RCE)	
1802 900	1802 900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$) 180.00

SUBMITTED BY

(Complete if applicable)

Name (Print/Type)	Jeffrey T. Helvey	Registration No. (Attorney/Agent)	44,757	Telephone	(202) 371-2600
Signature	[Signature]			Date	11/12/04

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Sorrells *et al.*

Appl. No.: 09/525,615

Filed: March 14, 2000

For: **Method, System and Apparatus
for Balanced Frequency Up-
Conversion of a Baseband Signal
and 4-Phase Receiver and
Transceiver**

Confirmation No.: 7843

Art Unit: 2631

Examiner: Phu, Phuong M.

Atty. Docket: 1744.0450003

Fourth Supplemental Information Disclosure Statement

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The numbering on this Fourth Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Third Supplemental Information Disclosure Statement filed on July 22, 2004 in connection with the above-captioned application.

Applicants have listed publication dates on the attached Form PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may

not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Document AE56 was cited in an Office Action, mailed August 17, 2004, in related U.S. Patent Application No. 09/476,093, filed January 3, 2000, entitled "Communication System Method With Multi-Mode and Multi-Band Functionality and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter.

Documents AF56-AI56, AA57, and AB57 were cited in an Office Action, mailed August 25, 2004, in related U.S. Patent Application No. 10/290,323, filed November 8, 2002, entitled "Method and Apparatus for DC Offset Removal in a Radio Frequency Communication Channel," directed to related subject matter.

Documents AC57-AE57 were cited in an Office Action, mailed September 8, 2004, in related U.S. Patent Application No. 09/632,857, filed August 4, 2000, entitled "Wireless Local Area Network (WLAN) Technology and Applications Including Techniques of Universal Frequency Translation," directed to related subject matter.

Documents AF57-AI57 were cited in an Office Action, mailed September 8, 2004, in related U.S. Patent Application No. 09/986,764, filed November 9, 2001, entitled "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

Documents AA58 and AP59 were cited in an Office Action, mailed September 21, 2004, in related U.S. Patent Application No. 09/567,977, filed May 10, 2000, entitled

"Optical Down-converter Using Universal Frequency Translation," directed to related subject matter.

Documents AB58-AE58 were cited in a Notice of Allowance, mailed September 27, 2004, in related U.S. Patent Application No. 09/987,193, filed November 13, 2001, entitled "Method and Apparatus for a Parallel Correlator and Applications Thereof," directed to related subject matter.

Document AF58 was cited in an Office Action, mailed September 29, 2004 in related U.S. Patent Application No. 09/632,857, filed August 4, 2000, entitled " Wireless Local Area Network (WLAN) Technology and Applications Including Techniques of Universal Frequency Translation," directed to related subject matter.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- ☐ 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- ☐ 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed within three months of the date of filing of a national application other than a continued prosecution application (CPA), OR within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, OR before the mailing date of a first Office Action on the merits OR

before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No statement or fee is required.

- ☐ 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- ☐ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ c. Attached is our PTO-2038 Credit Card Payment Form in the amount of _____ in payment of the fee under 37 C.F.R. § 1.17(p).
- ☒ 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of **\$180.00** in payment of the fee under 37 C.F.R. § 1.17(p); in addition:
- ☐ a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign

application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).

- ☒ b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- ☐ 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- ☐ 6. A concise explanation of the relevance of non-English language documents appears below:
- ☒ 7. A copy of document AP59 is submitted. However, in accordance with 37 C.F.R. § 1.98(a)(2), no copies of U.S patents and patent application publications cited on the attached Form PTO-1449 are submitted.
- ☐ 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).
- ☐ 9. It is expected that the examiner will review the prosecution and cited art in the parent application no. _____, filed _____, and indicate in the next communication from the office that the art cited in the earlier prosecution histories have been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed Form PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey T. Helvey
Attorney for Applicants
Registration No. 44,757

Date: 11/12/01

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

FOURTH SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0450003APPLICATION NO.
09/525,615INVENTORS
Sorrells *et al.*FILING DATE
March 14, 2000ART UNIT
2631

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA						
	AB						
	AC						
	AD						
	AE56	4,132,952	01/1979	Hongu <i>et al.</i>			
	AF56	4,441,080	04/1984	Saari			
	AG56	4,873,492	10/1989	Myer			
	AH56	5,697,074	12/1997	Makikallio <i>et al.</i>			
	AI56	5,784,689	07/1998	Kobayashi			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

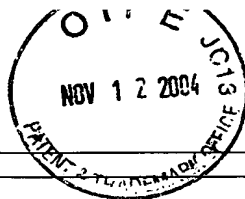
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP	<u>59</u>	Deboo, Gordon J., <i>Integrated Circuits and Semiconductor Devices</i> , 2 nd Edition, McGraw-Hill, Inc., pp. 41-45 (1977).
	AQ		
	AR		

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

FOURTH SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0450003APPLICATION NO.
09/525,615INVENTORS
Sorrells *et al.*FILING DATE
March 14, 2000ART UNIT
2631

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA57	6,335,656 B1	01/2002	Goldfarb <i>et al.</i>			
	AB57	6,690,232 B2	02/2004	Ueno <i>et al.</i>			
	AC57	5,636,140	06/1997	Lee <i>et al.</i>			
	AD57	6,366,622 B1	04/2002	Brown <i>et al.</i>			
	AE57	6,600,795 B1	07/2003	Ohta <i>et al.</i>			
	AF57	4,250,458	02/1981	Richmond <i>et al.</i>			
	AG57	5,760,629	06/1998	Urabe <i>et al.</i>			
	AH57	6,084,465	07/2000	Dasgupta			
	AI57	6,204,789 B1	03/2001	Nagata			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

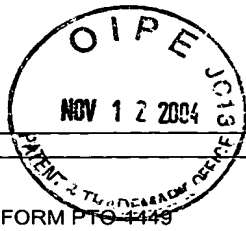
OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP		
	AQ		
	AR		

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-4449

FOURTH SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.
1744.0450003APPLICATION NO.
09/525,615INVENTORS
Sorrells *et al.*FILING DATE
March 14, 2000ART UNIT
2631

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA58	6,064,054	05/2000	Waczynski <i>et al.</i>			
	AB58	5,218,562	06/1993	Basehore <i>et al.</i>			
	AC58	5,239,496	08/1993	Vancraeynest			
	AD58	5,896,304	04/1999	Tiemann <i>et al.</i>			
	AE58	6,005,903	12/1999	Mendelovicz			
	AF58	5,834,979	11/1998	Yatsuka			
	AG						
	AH						
	AI						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP		
	AQ		
	AR		

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.